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10/723,203	11/26/2003	Yohichi Inada	2271/71602	9048

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Cooper & Dunham LLP
1185 Avenue of the Americas
New York, NY 10036

EXAMINER

MOTSINGER, SEAN T

ART UNIT	PAPER NUMBER
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2624

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07/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/723,203	Applicant(s) INADA, YOHICHI	
	Examiner SEAN MOTSINGER	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/25/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 and 38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9-15, 20-36 and 38 is/are rejected.
- 7) ☒ Claim(s) 5-8, 16-19, 26-28 and 32-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments/Amendments

The arguments/Amendments filed on 3/24/2008 have been entered upon the filing of an RCE on 4/25/2008 and are considered below.

Regarding applicants arguments with respect to the new matter objections to the specification. Applicant arguments have been considered and are found persuasive. However regarding pages 18 -20 examiner believes figure 4 shows the "found" non-zero coefficient in step 103.

Regarding the objection to the drawings applicants arguments have been considered and have been found persuasive.

Regarding the rejections under 35 U.S.C. 112 first applicants arguments and amendments have been fully considered are found persuasive with respect to scanning and searching, a predetermined threshold value, and Isolated valid coefficient these rejections have been withdrawn.

Rejections Under 35 U.S.C. 112 Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23-36 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claims 23-36, claims 23-36 claim "scanning the block register to search...." This is at odd with applicants arguments with respect to scanning and searching. It is not clear how a order in which objects are considers (as applicant describes scanning) could be a step. The examiners suggests a search step preformed in an inverse zig-zag order.

Rejections Under 35 U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 9-10, 12-14, 20-21 are rejected under 35 U.S.C. 1033(a) as being anticipated by Mukherjee US 2003/0123740 in view of Yonekawa et al US 5,046,121.

Re claim 1 Mukherjee discloses An information compression apparatus which compresses information and uses a DCT frequency conversion algorithm, comprising: a plurality of block registers which store (note the data must be stored so that further processing can be done see paragraph 41) block based multi-bit quantized data (note the data is quantized see paragraph 41) converted from the information output from an

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quantization execution module (quantize paragraph 38);; a first control (note the system must have controller) mechanism which controls operations of said apparatus so as to perform a scanning operation for scanning (reverse zig-zag scanning paragraph 55) the plurality of block registers in a scan order and a search operation (finding a coefficient paragraph 57) for searching each block in the scan according to said scan order a valid coefficient (non-zero coefficient paragraph 57); and a data correction mechanism (modifies paragraph 30) to modify the valid coefficient (non-zero coefficient paragraph 30) found in the search operation of the block searched by the first control mechanism to an invalid coefficient (zero coefficient see paragraph 30) based on the correction level stored in the correction level register (energy threshold paragraph 79). Mukherjee does not disclose a correction level register which presets a correction level indicating a number of data corrections and/or modifications. Yonekawa discloses a correction level register which presets a correction level indicating a number of data corrections and/or modifications (Upper limit cutting number column 9 lines 15-25) One of ordinary skill in the art could have easily modified Mukherjee to limit the number of coefficients which could be set to zero, and the results a limit one the number of coefficients set to be zero would have been predictable. Therefore it would have been obvious to one of ordinary skill in the art to modify Mukherjee with Yonekawa to reach the aforementioned advantage.

Re claim 2 Mukherjee further discloses wherein the valid coefficient is a coefficient having any coding amount except zero (not zero paragraph 57).

Re claim 3 Mukherjee further discloses wherein the scanning operation includes an inverse zigzag operation (see paragraph 55.)

Re claim 9 Mukherjee further discloses the information compression apparatus as defined in claim 1, wherein the apparatus uses a Huffman coding method (jpeg paragraph 31 note JPEG compression includes Huffman coding).

Re claim 10 Mukherjee further discloses wherein the apparatus uses a JPEG coding method (see paragraph 31).

Re claim 12-14 and 20-21 these claims are similar to claims 1-3 and 9-10 only using means for language however the claims recite is sufficient structure in the claim such that 35 U.S.C. 112 6th paragraph is NOT invoked. Furthermore due to similarity these claims are rejected for the same reasons as claims 1-3 and 9-10.

Re claim 23 Mukherjee discloses an information compression method for compressing information and using a DCT frequency conversion algorithm, comprising the steps of: latching quantized data including valid coefficients and invalid coefficients into a block register (note the quantized coefficients must be stored to perform further processing; performing an inverse zigzag scan (see paragraph 57) for scanning the block register

to search a valid coefficient (find the first coefficient not quantized to zero paragraph 57) said quantized data latched in said block register in step b to find one or more valid coefficients; modifying a valid coefficient found in step c to an invalid coefficient (push the coefficient to zero paragraph 57); searching for and finding another valid coefficient and modifying said another valid coefficient to the invalid coefficient (process is repeated paragraph 61); continuously performing the inverse zigzag scan when correction is smaller than the correction level in the presetting step (continuing until the threshold is exceeded paragraph 79); and transferring the data of the block register to a coding module (encoder paragraph 59) when the number of valid coefficients reaches the correction level (note the coding is done after the modification).

Mukherjee does not disclose presetting a predetermined number of data corrections and or modifications, counting a number of searched valid coefficients; incrementing the number of valid coefficients by one; and where the correction level is the number of modified coefficients counted in the counting step.

Yonekawa discloses presetting a predetermined number of data corrections and or modifications (column 9 lines 15-25) ; counting a number of of said valid coefficients valid coefficients (column 9 lines 15-25 note that the number of coefficients cut must be counted.); incrementing the number of modified valid coefficients by one (column 9 lines 15-25 note that the number of coefficients cut must be counted); and where the correction level is the number of searched (examiner interprets as modified) coefficients counted in the counting step (column 9 lines 15-25). One of ordinary skill in the art could have easily modified Mukherjee to limit the number of coefficients which

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could be set to zero, and the results a limit one the number of coefficients set to be zero would have been predictable. Therefore it would have been obvious to one of ordinary skill in the art to modify Mukherjee with Yonekawa to reach the aforementioned advantage.

Re claim 24 Mukherjee further discloses wherein when a valid coefficient is modified to steps d and f valid coefficients smaller than a predetermined threshold value are modified to an invalid coefficient (all coefficients selected are modified therefore all coefficients smaller than any threshold are modified.)

Re claim 25 since examiner has interpreted claim 25 to not include a presearching step due to the unclear claim there is no further limitation from claim 23 and claim 25 is rejected with the same rejection.

Re claim 38 Mukherjee discloses all of the elements of claim 1 Yonekawa discloses wherein said correction level preset by said correction level register corresponds to a number of data corrections (upper limit of transform coefficients to be cut see column 9 lines 15-25), and valid coefficients in said quantized data stored in said plurality of block registers are modified to invalid coefficients (note cut means they are encoded as zero see column 4 lines 1-5) until the number of modifications reaches the correction level

preset in the correction level register (note the number of frequencies cut cannot exceed the limit).

Claims 4, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukherjee and Yonekawa in view of Kim US 5,793,893.

Re claim 4 Mukherjee discloses all of the elements of claim 1 Mukherjee does not disclose further comprising a second control device configured to receive multi bit quantized data output from the quantized execution module before the multi-bit quantized data is transmitted to the plurality of block registers and after said second control device receives the multi-bit quantized data cause the first control mechanism to start the search operation. While Mukherjee must have at least one control device, Kim discloses a system with 2 control devices, i.e. a second control device (note the system must have some main controller) which receives multi bit quantized data output from the quantized execution module before the multi-bit quantized data is transmitted to the plurality of block registers and causes the first control mechanism (masking control see figure 1 note this controller controls only the masking i.e. the scanning and selecting steps see claim 4) to start the search operation. The motivation to combine is to “reduce the volume of transmission data in order to efficiently implement a low-bit rate codec” (see column 2 lines 10-15.) Therefore it would have been obvious to one of

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ordinary skill in the art to combine Mukherjee with Kim to reach the aforementioned advantage.

Re claim 15 this claim is similar to claim 4 only using means for language however the claims recite is sufficient structure in the claim such that 35 U.S.C. 112 6th paragraph is NOT invoked. Furthermore due to similarity these claims are rejected for the same reasons as claims 4.

Claims 29-31 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukherjee in view of Yonekawa in further view of common knowledge in the art.

Re claims 29-31 these claims recite computer code to perform the method of claims 23-25. Mukherjee and Yonekawa disclose the method of claims 23-25 but does not disclose the method of claims 23-25 preformed via a computer program, however, examiner is taking official notice that it is notoriously well known to perform such methods in a computer program and store them on CD's. The motivation to combine is to easily distribute perform such methods on a device with a computer processor. Therefore it would have been obvious to one of ordinary skill in the art to combine Mukherjee and Yonekawa with common knowledge in the art to reach the aforementioned advantage.

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Re claims 35 these claims recite computer code to perform the method of claims 23 and using a JPEG encoding method. Mukherjee and Yonekawa disclose the method of claims 23 and JPEG (see paragraph 31) but does not disclose the method of claims 23 preformed via a computer program, however, examiner is taking official notice that it is notoriously well known to perform such methods in a computer program and store them on CD's. The motivation to combine is to easily distribute perform such methods on a device with a computer processor. Therefore it would have been obvious to one of ordinary skill in the art to combine Mukherjee and Yonekawa with common knowledge in the art to reach the aforementioned advantage.

Claims 11 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukherjee and Yonekawa in view of Dick US 6,460,061

Re claim 11 Mukherjee discloses all of the elements of claim 1 Mukherjee does not disclose wherein the apparatus uses a sound data coding method. However Dick discloses wherein the apparatus uses a sound data coding method (column 7 lines 40-50.) Note that dick discloses that the 2D DCT can be used to encode sound, therefore one of ordinary skill in the art would be motivated to use the method of Mukherjee to compression sound at a reduced bit rate see Mukherjee paragraph 30. Therefore it would have been obvious to one of ordinary skill in the art to combine Mukherjee with Dick to reach the aforementioned advantage

Re claim 22 this claim is similar to claim 11 only using means for languagee however the claims recite is sufficient structure in the claim such that 35 U.S.C. 112 6th paragraph is NOT invoked. Furthermore due to similarity these claims are rejected for the same reasons as claims 11.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mukherjee in view of Yonekawa in view of common knowledge in the art in further view of Dick.

Re claim 36 This claim is the same as claim 29 exept for this time a sound data coding method is used. Mukherjee Yonekawa and common knowledge in the art discloses all of the elements of claim 29 (see rejection for claim 29), they does not disclose wherein the apparatus uses a sound data coding method. However Dick discloses wherein the apparatus uses a sound data coding method (column 7 lines 40-50.) Note that dick discloses that the 2D DCT can be used to encode sound, therefore one of ordinary skill in the art would be motivated to use the method of Mukherjee to compression sound at a reduced bit rate see Mukherjee paragraph 30. Therefore it would have been obvious to one of ordinary skill in the art to combine Mukherjee with Dick to reach the aforementioned advantage.

Allowable Subject Matter

Claims 5-8, 16-19 26-28 and 32-34 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st and 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Re claims 5,16, 26, 32 these claims contain allowable subject matter because the prior art of record does not “move the addresses of the isolated valid coefficients...so that the isolated valid coefficients are arranged consecutively”

Re claims 6 and 17 these claims contain allowable subject matter because the prior art of record does not disclose “a plurality of logical or circuits.... Such that each of the plurality of or circuits outputs one when any one of the block registers connected thereto has a valid coefficient.” Claims 7-9 and 18-19 contain allowable subject matter because they depend from claims 6 and 17.

Re claims 27 and 33 these claims contain allowable subject matter because the prior art of record does not disclose a “calculating step for calculating a total sum of coefficients of block registers arranged along each scanning line corresponding to one of different frequencies used in the DCT frequency conversion algorithm, and a start address changing step for changing an address of the block register to start the inverse zigzag scan.” Claims 28 and 34 contain allowable subject matter because they depend from these claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEAN MOTSINGER whose telephone number is (571)270-1237. The examiner can normally be reached on 9-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571)272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Motsinger
7/20/2008

***/Jingge Wu/
Supervisory Patent Examiner, Art Unit 2624***